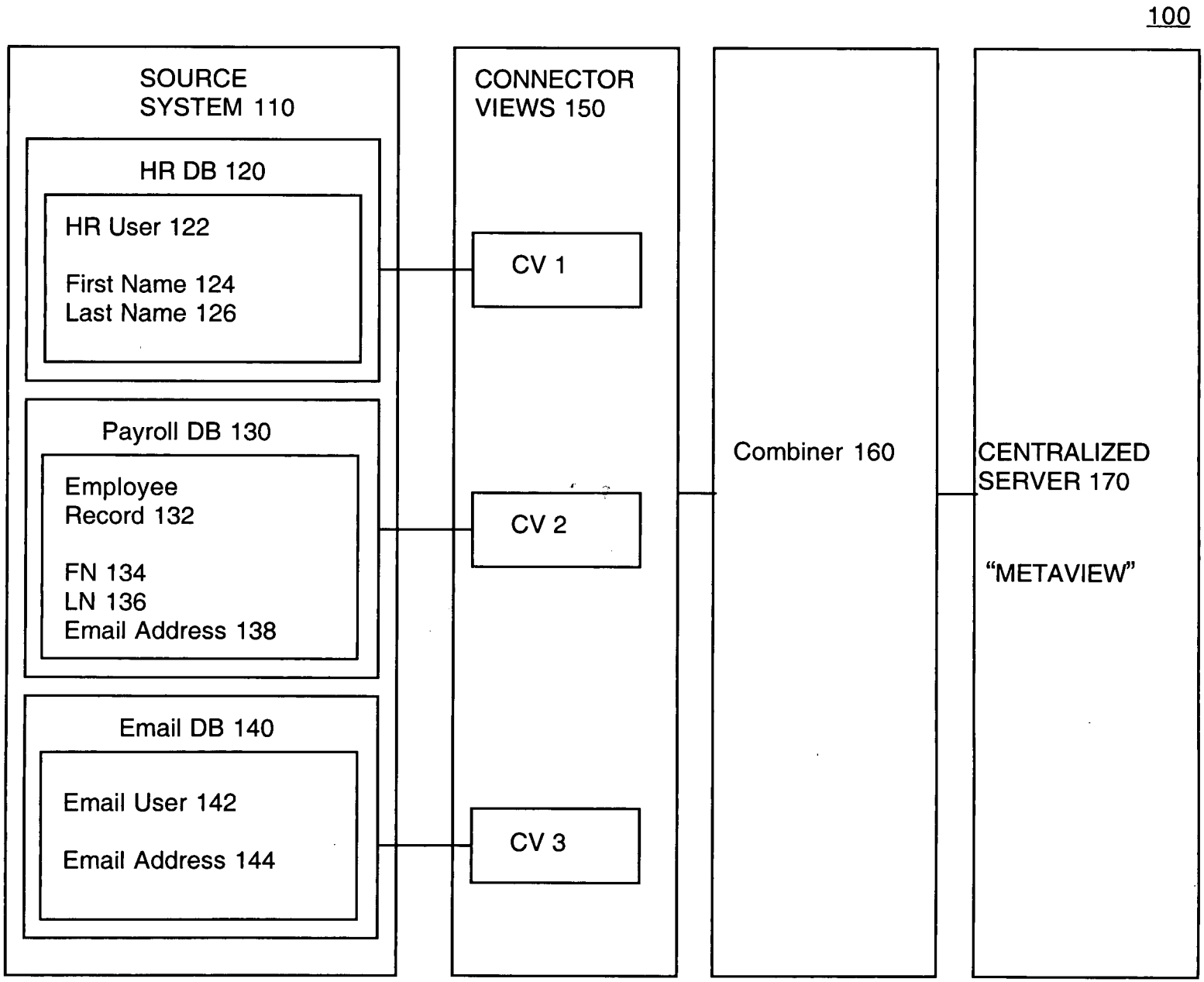

Prior Art Figure 1

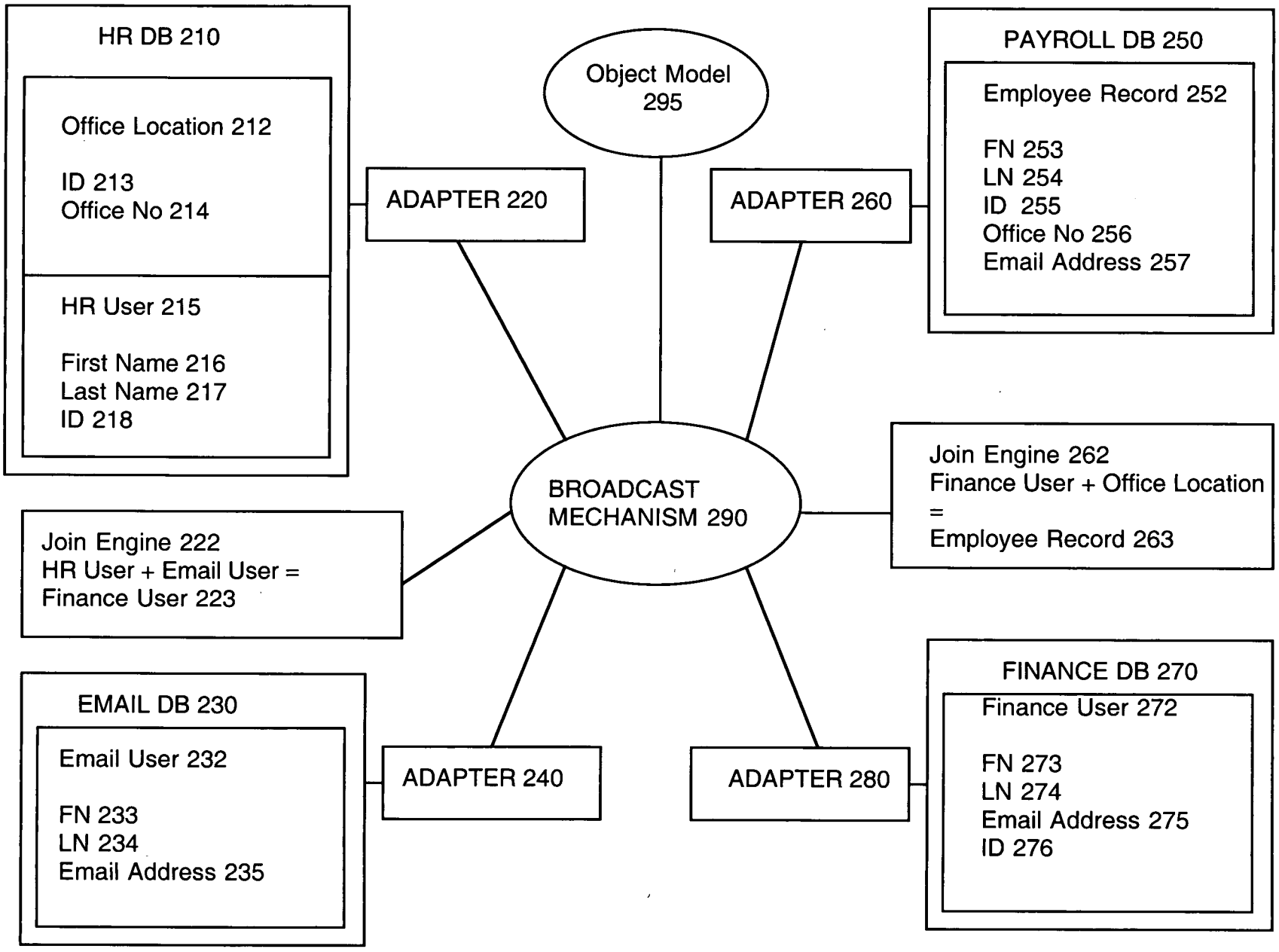
HR DB 210
Office Location 212
ID 213
Office No 214
HR User 215
First Name 216
Last Name 217
ID 218
Object Model 295
ADAPTER 220
ADAPTER 260
PAYROLL DB 250
Employee Record 252
FN 253
LN 254
ID 255
Office No 256
Email Address 257
BROADCAST MECHANISM 290
Join Engine 222
HR User + Email User = Finance User 223
Join Engine 262
Finance User + Office Location = Employee Record 263
EMAIL DB 230
Email User 232
FN 233
LN 234
Email Address 235
ADAPTER 240
ADAPTER 280
FINANCE DB 270
Finance User 272
FN 273
LN 274
Email Address 275
ID 276

Figure 2

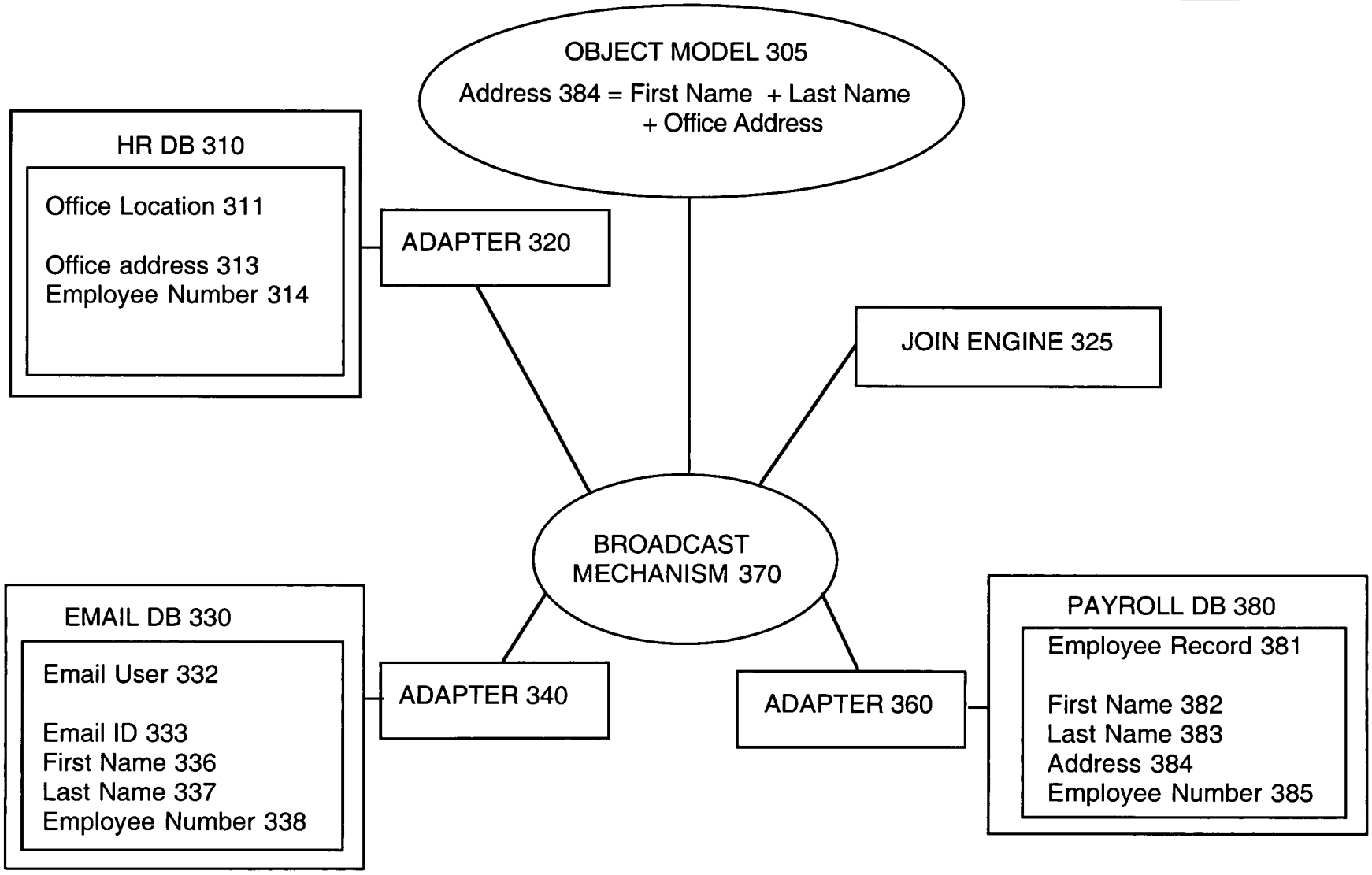
OBJECT MODEL 305
Address 384 = First Name + Last Name
+ Office Address
HR DB 310
Office Location 311
Office address 313
Employee Number 314
ADAPTER 320
JOIN ENGINE 325
BROADCAST
MECHANISM 370
EMAIL DB 330
Email User 332
Email ID 333
First Name 336
Last Name 337
Employee Number 338
ADAPTER 340
ADAPTER 360
PAYROLL DB 380
Employee Record 381
First Name 382
Last Name 383
Address 384
Employee Number 385

Figure 3A

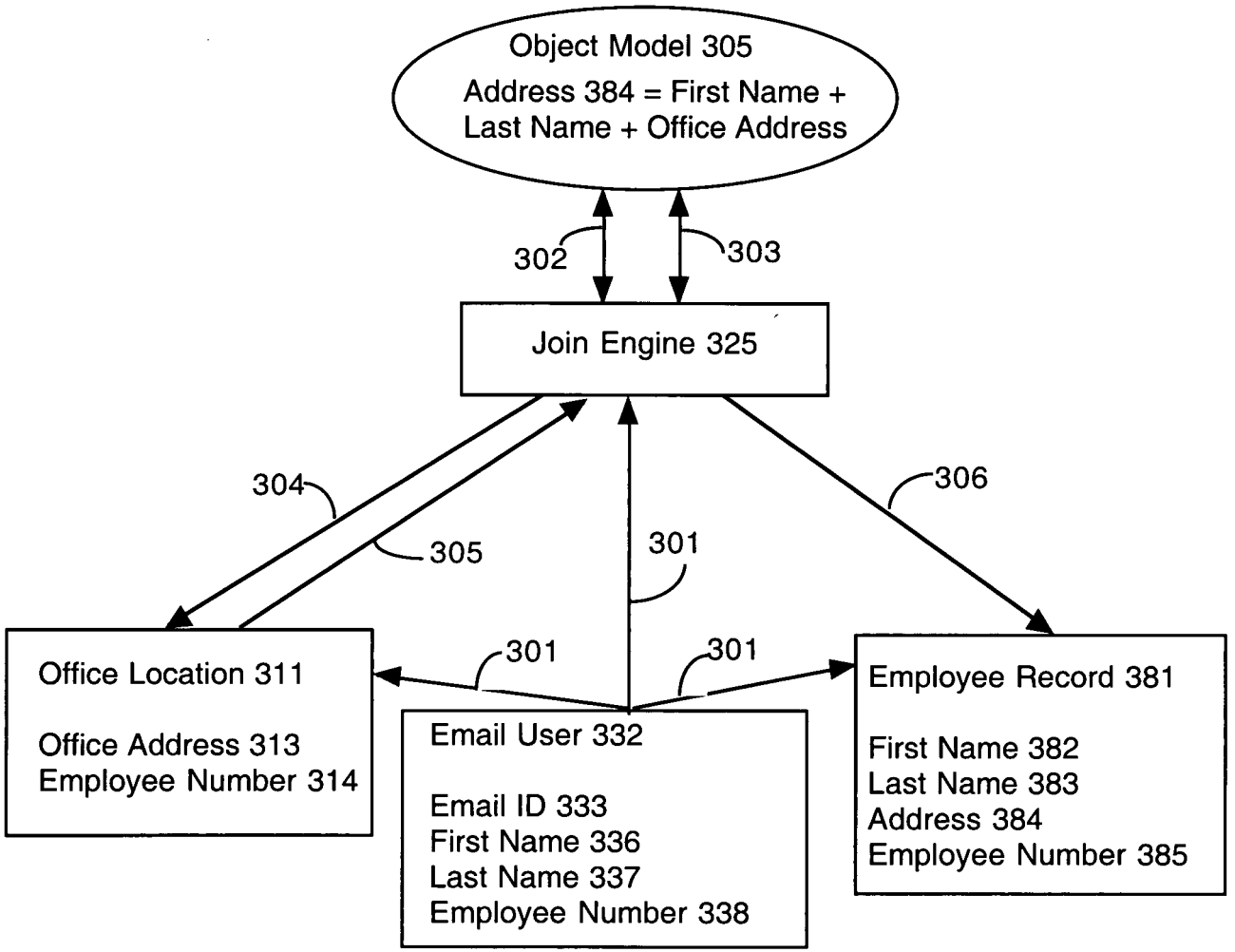
Object Model 305
Address 384 = First Name + Last Name + Office Address
302
303
Join Engine 325
304
305
301
306
Office Location 311
Office Address 313
Employee Number 314
301
301
Email User 332
Email ID 333
First Name 336
Last Name 337
Employee Number 338
Employee Record 381
First Name 382
Last Name 383
Address 384
Employee Number 385

Figure 3B

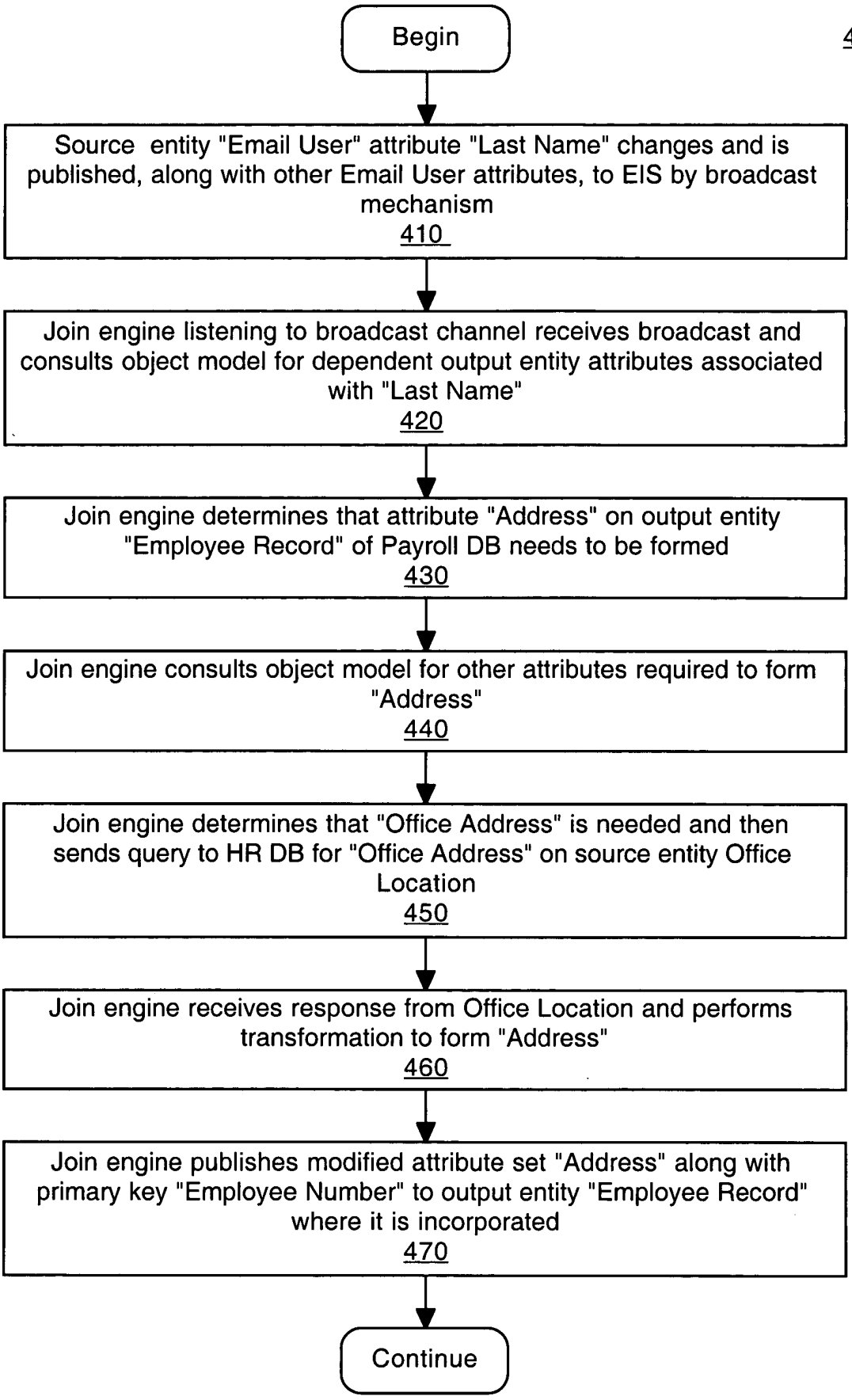
Begin
400
Source entity "Email User" attribute "Last Name" changes and is published, along with other Email User attributes, to EIS by broadcast mechanism
410
Join engine listening to broadcast channel receives broadcast and consults object model for dependent output entity attributes associated with "Last Name"
420
Join engine determines that attribute "Address" on output entity "Employee Record" of Payroll DB needs to be formed
430
Join engine consults object model for other attributes required to form "Address"
440
Join engine determines that "Office Address" is needed and then sends query to HR DB for "Office Address" on source entity Office Location
450
Join engine receives response from Office Location and performs transformation to form "Address"
460
Join engine publishes modified attribute set "Address" along with primary key "Employee Number" to output entity "Employee Record" where it is incorporated
470
Continue

Figure 4

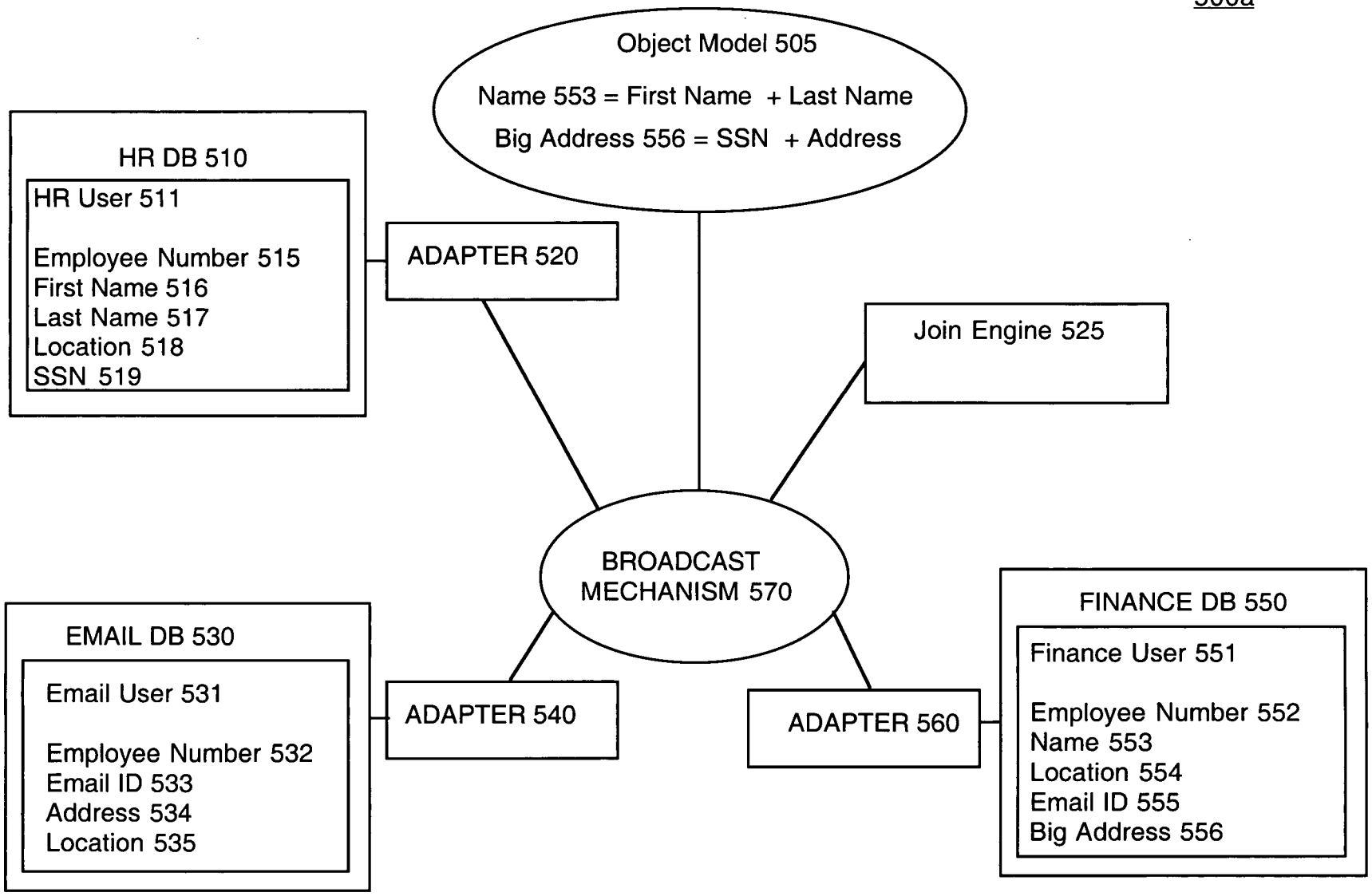
Object Model 505
Name 553 = First Name + Last Name
Big Address 556 = SSN + Address
HR DB 510
HR User 511
Employee Number 515
First Name 516
Last Name 517
Location 518
SSN 519
ADAPTER 520
Join Engine 525
BROADCAST MECHANISM 570
EMAIL DB 530
Email User 531
Employee Number 532
Email ID 533
Address 534
Location 535
ADAPTER 540
ADAPTER 560
FINANCE DB 550
Finance User 551
Employee Number 552
Name 553
Location 554
Email ID 555
Big Address 556

Figure 5A

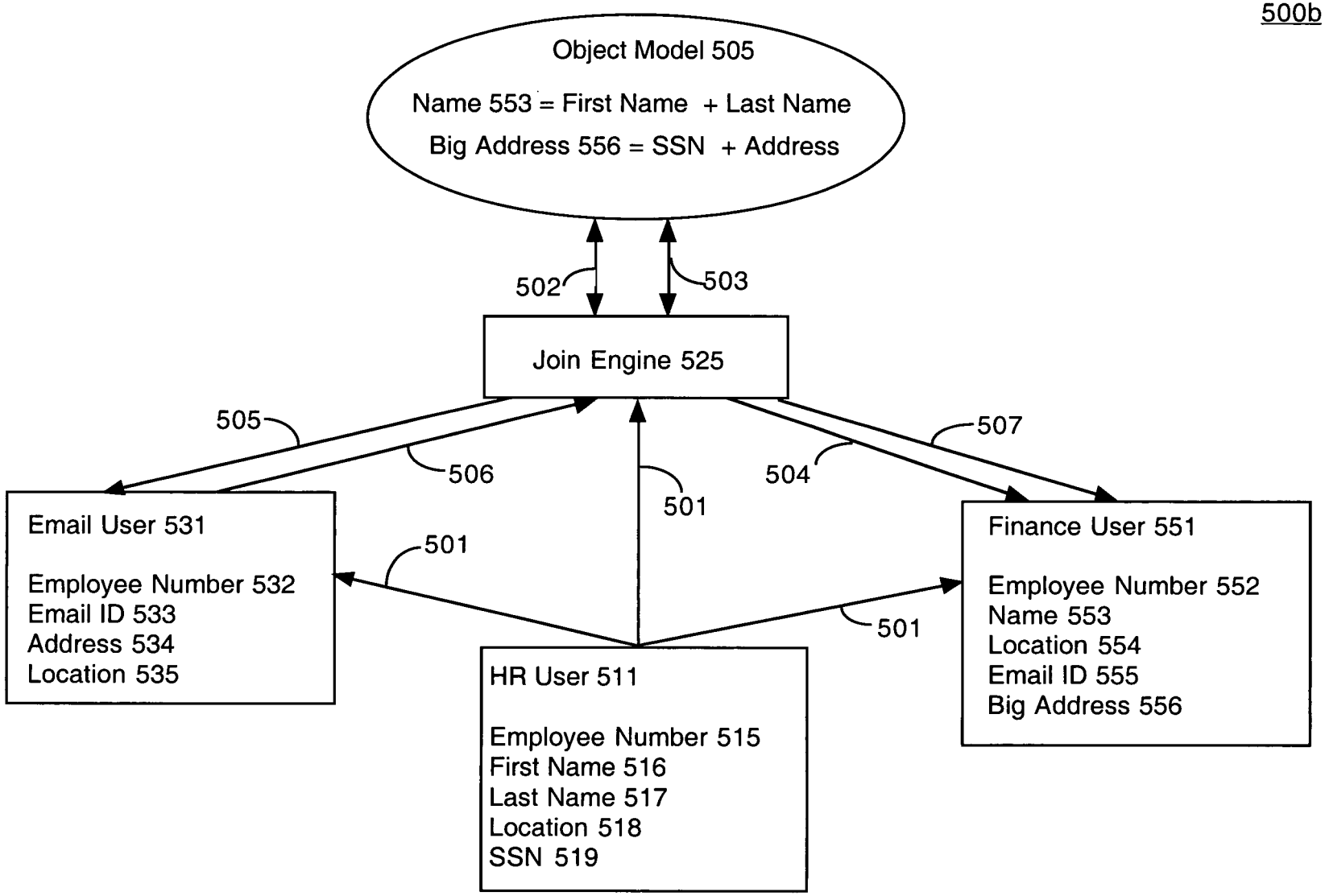
Object Model 505
Name 553 = First Name + Last Name
Big Address 556 = SSN + Address
502
503
Join Engine 525
505
506
501
504
507
Email User 531
Employee Number 532
Email ID 533
Address 534
Location 535
501
501
HR User 511
Employee Number 515
First Name 516
Last Name 517
Location 518
SSN 519
Finance User 551
Employee Number 552
Name 553
Location 554
Email ID 555
Big Address 556

Figure 5B

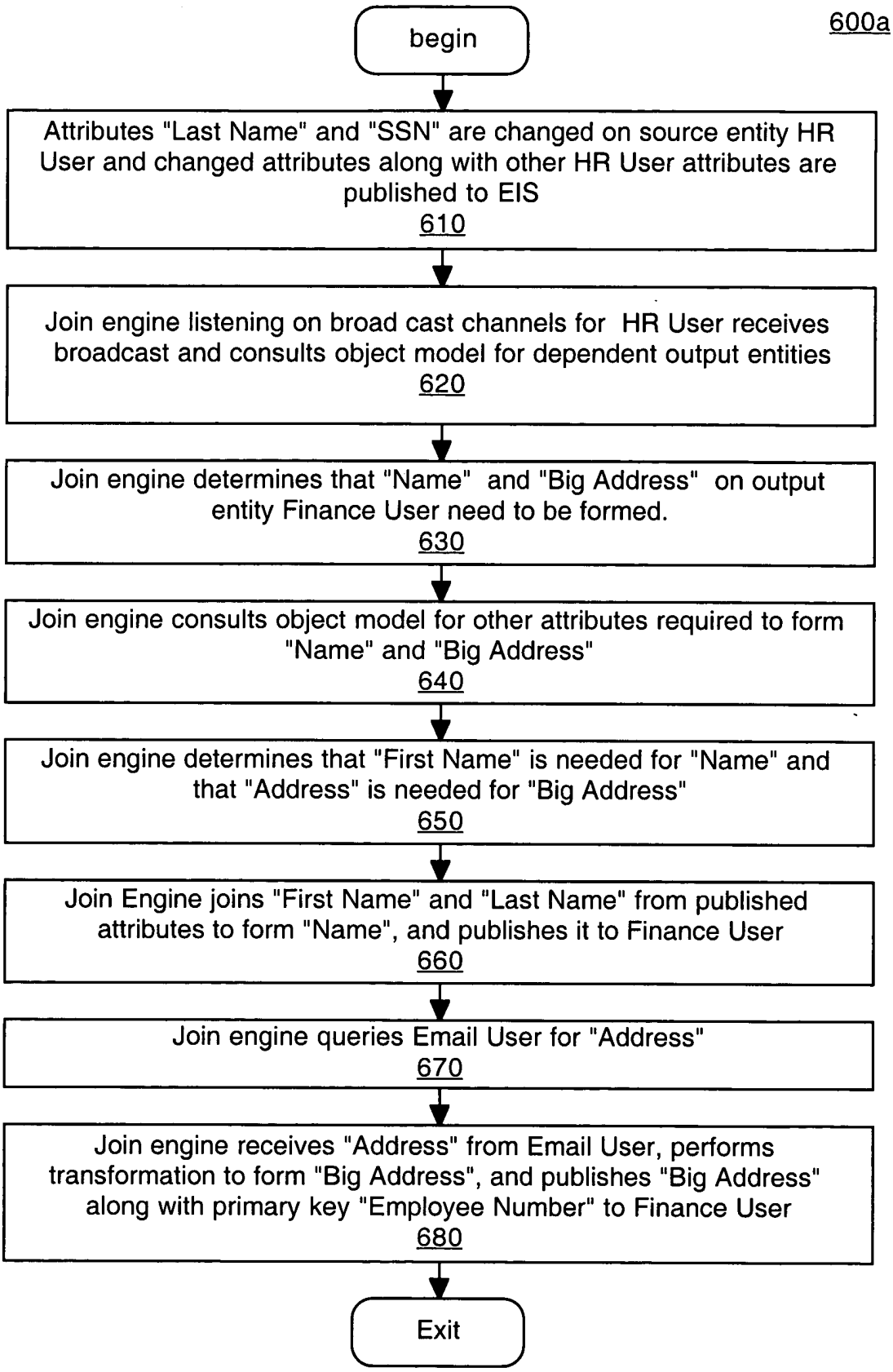
600a
begin
Attributes "Last Name" and "SSN" are changed on source entity HR User and changed attributes along with other HR User attributes are published to EIS
610
Join engine listening on broad cast channels for HR User receives broadcast and consults object model for dependent output entities
620
Join engine determines that "Name" and "Big Address" on output entity Finance User need to be formed.
630
Join engine consults object model for other attributes required to form "Name" and "Big Address"
640
Join engine determines that "First Name" is needed for "Name" and that "Address" is needed for "Big Address"
650
Join Engine joins "First Name" and "Last Name" from published attributes to form "Name", and publishes it to Finance User
660
Join engine queries Email User for "Address"
670
Join engine receives "Address" from Email User, performs transformation to form "Big Address", and publishes "Big Address" along with primary key "Employee Number" to Finance User
680
Exit

Figure 6A

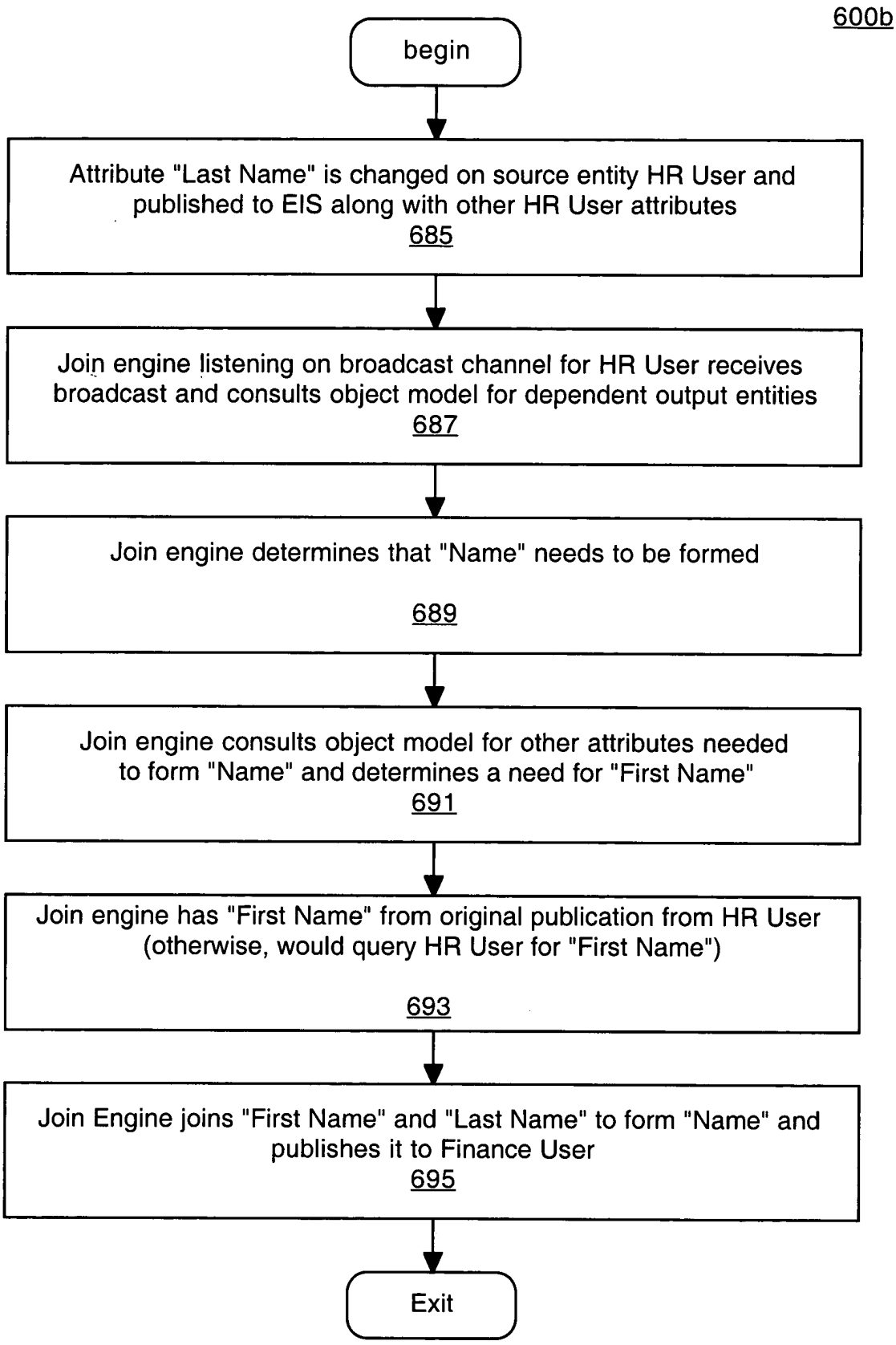
600b
begin
Attribute "Last Name" is changed on source entity HR User and published to EIS along with other HR User attributes
685
Join engine listening on broadcast channel for HR User receives broadcast and consults object model for dependent output entities
687
Join engine determines that "Name" needs to be formed
689
Join engine consults object model for other attributes needed to form "Name" and determines a need for "First Name"
691
Join engine has "First Name" from original publication from HR User (otherwise, would query HR User for "First Name")
693
Join Engine joins "First Name" and "Last Name" to form "Name" and publishes it to Finance User
695
Exit

Figure 6B

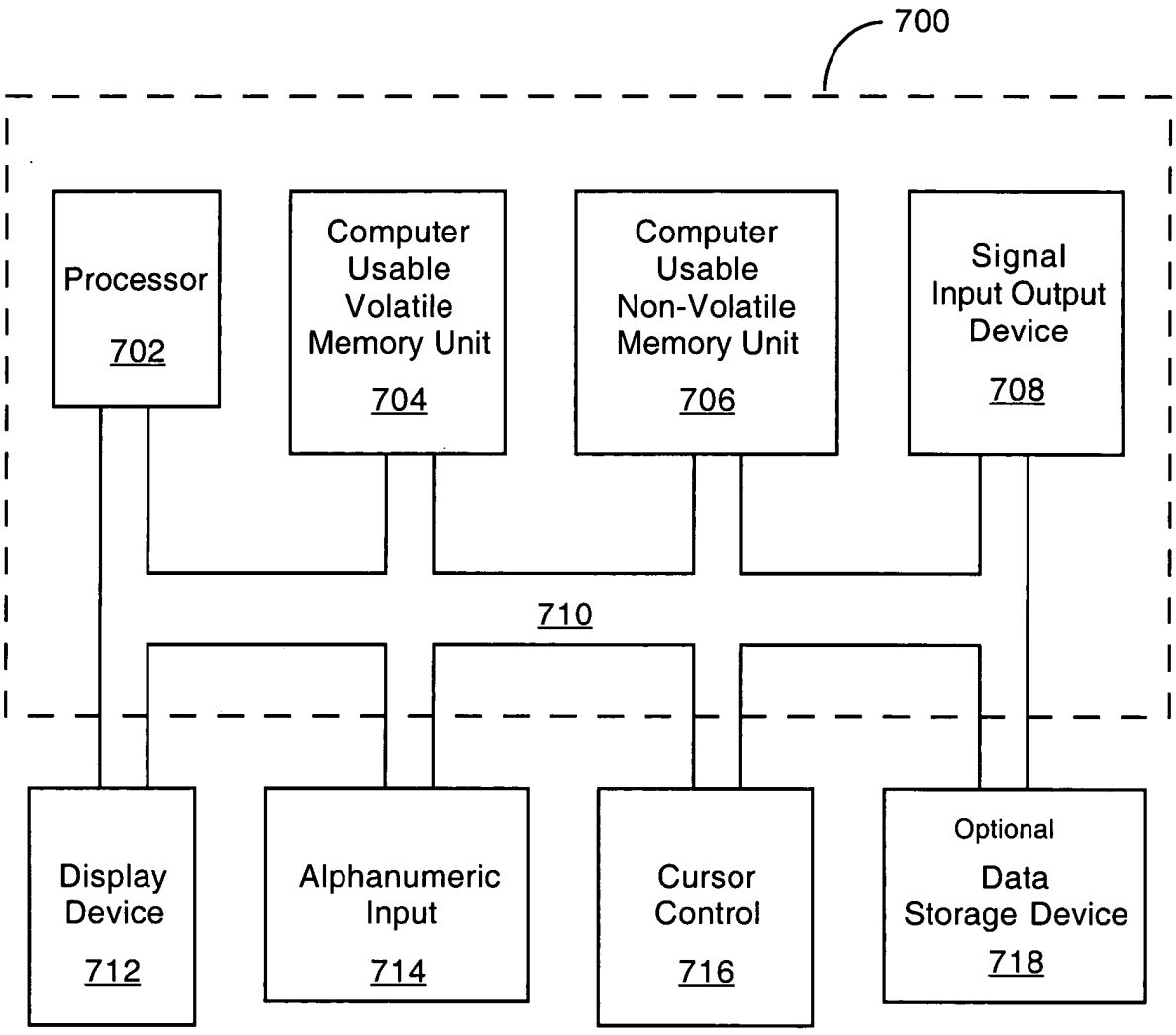
700
Processor
702
Computer Usable Volatile Memory Unit
704
Computer Usable Non-Volatile Memory Unit
706
Signal Input Output Device
708
710
Display Device
712
Alphanumeric Input
714
Cursor Control
716
Optional
Data Storage Device
718

Figure 7